

What is claimed is:

1. An inspection method for cream solder for determining whether or not the shape of the cream solder is appropriate based on information about the height of the cream solder by irradiating light from substantially besides in two directions opposing each other through a lighting means to the cream solder so as to obtain at least two images and obtaining a difference between the obtained images.

2. An inspection method for the cream solder according to claim 1 for determining whether or not the shape of the cream solder is appropriate by irradiating light to the cream solder in two directions opposing each other through the lighting means disposed substantially in the lateral direction of the cream solder, taking pictures of a reflection light from the cream solder with a camera disposed above, obtaining a difference between at least two bright/dark images so as to obtain a side inclined portion of the cream solder from luminance thereof, and comparing the value of the inclined portion with a reference value set up preliminarily for determining whether or not the shape of the cream solder is appropriate.

3. An inspection method for the cream solder according to claim 1 wherein the solder printed on a substrate is photographed with a camera disposed above the substrate, information about area of a top face and a bottom face of the solder is obtained from an image of the photographed solder and the amount of the

solder is computed from information of the area by arithmetic operation.

4. An inspection method for the cream solder according to claim 1 wherein light is irradiated to the cream solder from substantially beside in at least two directions opposing each other alternately through a lighting means so as to obtain at least two images, a difference between the obtained images is calculated to gain information about the height of the cream solder and then determine whether or not the shape of the cream solder is appropriate, a reflection light from a non-soldered portion such as a silk printed portion formed on a printed circuit board is photographed with the camera and then a difference between at least the two bright/dark images is obtained to remove the non-soldered portion from the image.

5. An inspection method for the cream solder wherein light is irradiated to the cream solder from substantially beside in at least two directions opposing each other alternately through a lighting means so as to obtain at least two images, a difference between the obtained images is calculated to gain information about the height of the cream solder and then whether or not the shape of the cream solder is appropriate is determined based on the information about the height.

6. An inspection method for the cream solder according to claim 5 wherein light is irradiated to the cream solder from

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substantially beside in at least two directions opposing each other alternately through a lighting means so as to obtain at least two images, a difference between the obtained images is calculated to gain information about the height of the cream solder and then whether or not the shape of the cream solder is appropriate is determined based on the information about the height, and a reflection light from a non-soldered portion such as a silk printed portion formed on a printed circuit board is photographed with the camera and then a difference between at least the two bright/dark images is obtained to remove the non-soldered portion from the image.

7. An inspection apparatus for the cream solder comprising:
camera disposed above a printed circuit board which is subject of inspection;

lighting means disposed substantially in the lateral direction of the cream solder applied to the printed circuit board and for irradiating light to the cream solder in two directions opposing each other alternately;

arithmetic operating portion which obtains a difference of luminance between at least two images of a side inclined portion of the cream solder photographed with said camera by alternately turning on the lighting means; and

determining portion for deciding whether or not the shape of the cream solder is appropriate by comparing the value of the side inclined portion obtained by the arithmetic operating portion with a preliminarily set reference value.

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8. An inspection apparatus for the cream solder comprising:
camera disposed above a printed circuit board which is
subject of inspection;

lighting means disposed substantially in the lateral
direction of the cream solder applied to the printed circuit
board and for irradiating light to the cream solder in two
directions opposing each other alternately;

image processing means for counting dimensions and area
of the solder from an image of the solder taken with the camera;

arithmetic operating means for computing the dimensions
and area counted by the image processing means to obtain the
amount of the solder; and

control means provided with a program for inspecting the
shape of the solder to control the respective means.

9. An inspection apparatus for the cream solder comprising:
camera disposed above the printed circuit board which is
subject of inspection;

lighting means disposed substantially in lateral
direction of non-soldered portion such as silk-printed portion
formed on the printed circuit board and for irradiating light
to the non-soldered portion in two directions opposing each other
alternately; and

arithmetic operating portion which switches the lighting
means to obtain a difference between at least two images taken
with the camera and removes the non-soldered portion from the
image.